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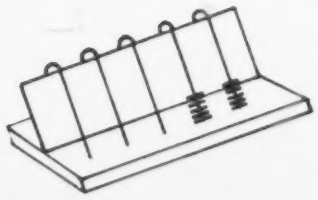
ABSTRACT

School districts in New York State have been engaged in developing E.S.E.A. Title I projects since 1965. This document represents an attempt to formulate some aspects of this experience in a form useful for project directors. The content of this report is based on the recorded experiences of one school district during the summer of 1970 in running remedial reading and mathematics programs. An analysis of the results of the New York State mathematics and reading tests in grades three and six and the Iowa Test of Basic Skills in grades four and five indicated that problem solving is an area of major difficulty. Conferences with classroom teachers and remedial personnel confirmed the need for attacking problem solving techniques in conjunction with reading difficulties. This recommendation was made to the Superintendent and the Board of Education who concurred with the professional findings. The decision was made to concentrate on this problem by implementing a special pilot program during the summer which would serve as a launching platform for further district action in the fall. (Author/JM)

# ESEA TITLE I

ED 0593335

# Anatomy of an Elementary Project



Consulting

Planning

Goals

Action

**PROBLEM**

Evaluation

Follow-up

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ESEA - TITLE I

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ANATOMY OF AN ELEMENTARY PROJECT

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IDENTIFYING THE PROBLEM

|

CONSULTING AND PLANNING

|

SETTING EDUCATIONAL GOALS

|

OUTLINING THE PROGRAM

|

WORKING WITH CHILDREN

|

EVALUATING THE PROJECT

|

FOLLOW - UP

# FOREWORD

This curriculum oriented publication is the first in a series which will be provided as an added service to personnel in local school districts who are charged with the responsibility of developing meaningful ESEA Title I projects.

While the cooperation of a number of people was necessary during the implementation of this project a special note of appreciation is given to William Moran, superintendent of schools, and members of his staff. These professionals worked closely with Peter A. Martin of the Bureau of Elementary Curriculum Development to make this publication possible.

Irving Ratchick
Assistant Commissioner for
Compensatory Education

## INTRODUCTION

School districts in New York State have been engaged in developing ESEA Title I projects since 1965, and the experience thus gained has provided much useful information for project directors. However, requests for increased assistance in planning ever improving projects to fit the needs of disadvantaged youngsters, continue to be received by the Division of Education for the Disadvantaged. The content of this report is based on the recorded experiences of one school district this past summer which worked cooperatively with Peter A. Martin of the Bureau of Elementary Curriculum Development, who prepared this project report.

The flow chart which is a part of this report provides some check points which should be helpful to school districts preparing Title I projects. No attempt has been made to present this project as a complete success. In fact, as will be noted in the evaluation, the professional staff was critical of itself in terms of improving the success of this project. The complete cooperation of the district administrations and the teachers involved made the preparation of this report possible.

## THE PROBLEM IDENTIFIED

While every school district faced with the responsibility of educating large numbers of children is also faced with a variety of learning problems, this project is an excellent example of the cumulative effect of a relatively small Title I project upon the functioning of a total school district program.

An analysis of the results of the New York State mathematics and reading tests in grades three and six and the Iowa Test of Basic Skills in grades four and five indicated that problem solving represented an area of major difficulty. Conferences with classroom teachers, and remedial personnel confirmed the need for attacking problem solving techniques in conjunction with reading difficulties. This recommendation was made to the superintendent and the board of education who concurred with the professional findings. The decision was made to concentrate upon this problem by implementing a special pilot program during the summer which would serve as a launching platform for further district action in the fall.

## IDENTIFYING THE STUDENTS

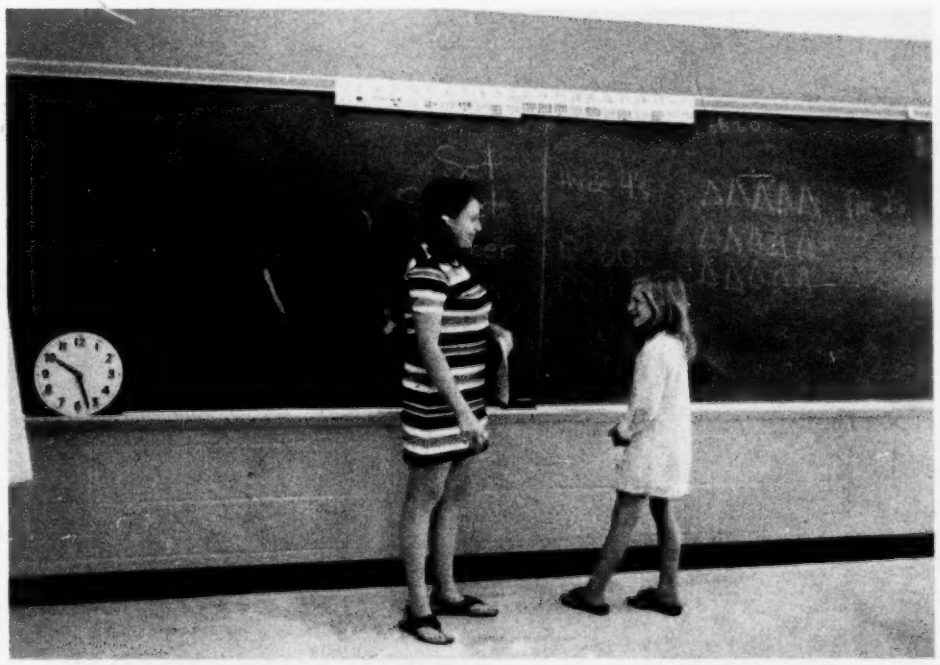
A check of student records in each of the districts' five elementary schools showed 87 students in grades two through five who would meet preliminary criteria set up for inclusion in this program. These criteria were:

- An I.Q. of 90 or more
- One half year below reading level in grade two
- One full year below reading level in grades three, four, and five
- A score on the Iowa Tests of Basic Skills or the New York State Mathematics tests on the problem solving section in the lowest three stanines
- Teacher judgment particularly in grade two

A staff of eight classroom teachers, a reading specialist, and a coordinator was recruited within the district to implement the program. Two teachers were recruited for each grade level from two through five.

These teachers represented experience levels of from two to over 20 years.

A letter was sent to the parents of each child who fitted the criteria set up for inclusion in the program. This letter explained that a special pilot project would be underway for four weeks during the summer to develop materials and techniques for use in the district mathematics program. It explained in simple terms that emphasis would be placed on the development of reading skills related to solving problems. Further explanation was given that it would be necessary to have a small group of students who were having difficulty in reading and mathematics to try out new materials and techniques this summer. While a major purpose was to improve the program, parents were informed that teachers felt that students participating in the summer program would also benefit from the experience.



*No Problems Here!*

The dates and hours of the program were given, plus the fact that transportation would be the responsibility of the parent. A return date deadline of June 12 was set for parents to return permission slips

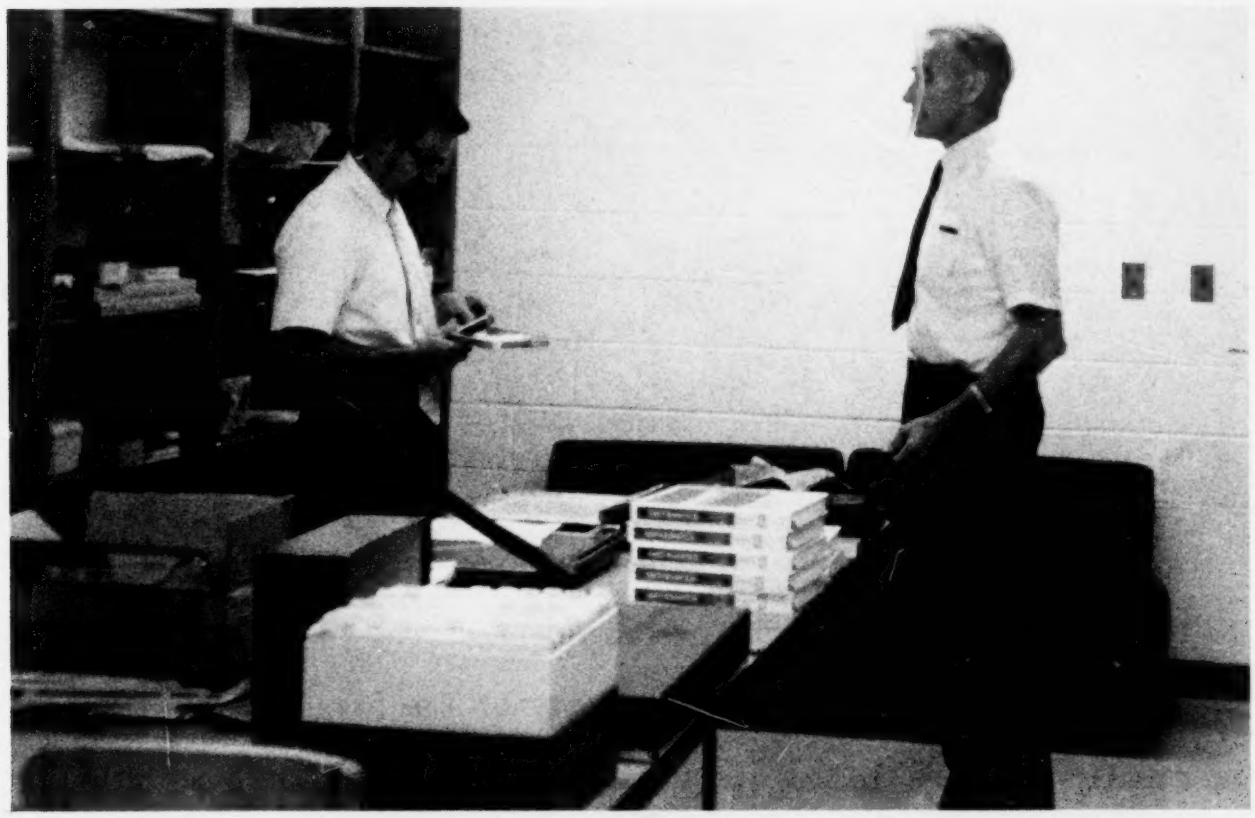
to their child's respective schools for inclusion in the program. A total of 48 positive responses were received back from parents who wished to have their children included in the program.

## PROGRAM FORMAT

### First Week

The program approved within the limits of project funding was structured around a session of six weeks. This schedule ran from July 6, 1970 through August 14, 1970 with the hours set from 9 a. m. to 12 noon.

Because of the lateness of funding and the fact that most of the participants lacked experience in this type of project a decision was made to have teachers spend the first week planning together in teams with the reading specialist and coordinator in developing materials and techniques and in becoming familiar with equipment and materials purchased for this program.



*Teachers Discover New Materials*

Additional materials and equipment selected included:

- A cassette recorder/player
- 2 cassette players
- Sullivan Mathematics Laboratory
- Cuisenaire Classroom Mathematics Kit
- Blank tapes
- Webster arithmetic concept plaques
- Wallensak Mathematics tapes
- Imperial tapes in primary mathematics
- Records and pads from Harcourt, Brace and World.

During the first week teachers addressed themselves to the problem of measurement of improvement. Teachers realized that four weeks of instruction could not be expected to reverse problem solving weaknesses which had developed over a long period of time. However, some measurement of improvement would be necessary to serve as one indication of program effectiveness. A decision was made to use pre and post tests of 15 items each. These were given in problem form and followed average grade expectations. Vocabulary was examined by the reading specialist for appropriateness. The definition of improvement developed was based on the past performances of the students participating in the project. A projection was made that an increase of from one to three problems solved correctly in the post-test would be considered normal growth. This criteria was based on the best available judgment of the administrators and teachers. Therefore, a student solving more than three additional problems correctly in the post-test would be making gains beyond usual expectations. In addition, a daily log was kept on each child in which were recorded those strategies which did or did not appear to help each individual.

## PROGRAM FORMAT

### Second - Fifth Weeks

During the second through fifth weeks of the program, teachers worked with children in a small group sitaution. Two groups were formed on each of the grade levels two through five. The program each day started at 9 a. m. with teachers having the first hour for planning and discussion. The reading specialist met with the teachers during this time and as the program progressed met with those teachers whose children would be having extra reading help on a particular day. A schedule was formulated where by each group met with the reading specialist on alternate days for a period of one-half hour. The reading specialist reviewed with the classroom teachers involved where students were in problem solving on the day they were scheduled for reading instruction. She then employed flash cards, games and other audio-visual approaches to reinforce what the classroom teacher was doing on a particular day. Any problem a child displayed with either his regular classroom teacher, or the reading specialist was discussed by both so a plan to attack the deficiency could be evolved.

*Teachers Communicate*

During the four weeks when children were participating in this program, weekly consultations were held with Peter A. Martin of the Bureau of Elementary Curriculum Development. In addition follow-up visits were made by Lynn Richbart and Frederic Paul of the Bureau of Mathematics Education, also of the New York State Education Department. The publication, Teaching Elementary Mathematics Using Laboratory Approaches served to supply some of the Philosophy which is apparent throughout this program. Students followed an active program which moved away from the traditional textbook, workbook, worksheet approach that had not proven effective.

While it is impossible within the size limitation of this publication to even list all of the activities employed during this program, a few illustrations may serve to help the reader visualize some of the types of activities involved.

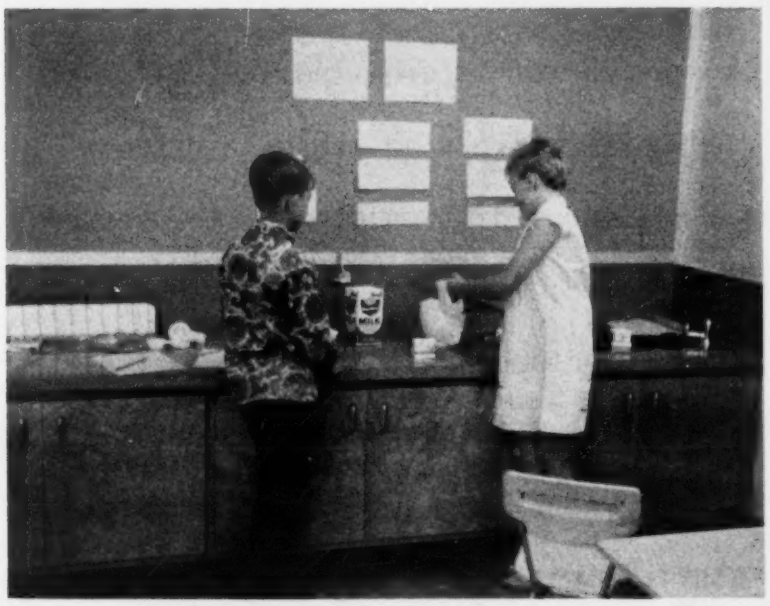
In the second grade groups, children had evidenced weakness in concepts involving time. Flashcards were made up by the teachers on this level which included the following vocabulary:

1. _____ minutes to _____
2. _____ minutes past _____
3. o'clock
4. hour
5. second hand
6. second hand
7. before
8. after

*An Interested Second Grade*

Teachers introduced the vocabulary, and children then made their own flashcards to drill on these words. A large clock was used for classroom discussion. Children then made their own clocks from paper plates. A clock of this type was taken home for further use with parents or other family members or friends. Games were employed which served to stimulate interest in concepts of time and also served as an informal check of progress. Children made tapes which explained how they had arrived at an answer. These tapes were sometimes played for the class, and also served to highlight for the teacher the difficulties a child was encountering in arriving at solutions to time problems. Children were generally thrilled listening to their own explanations on tape. The reading specialist also utilized these tapes in planning individualized instruction in reading skills where a need was indicated.

The third grade groups, where a number of severe reading problems were encountered, moved to a classroom laboratory oriented approach. Task cards were developed which challenged students to solve problems by using a variety of measuring cups and water. This was later extended to other measuring devices and representations of measurement including Cuisenaire rods. Children reacted positvely to this approach. A second particularly well received activity involved the use of special sale coupons taken from local daily papers. Those coupons, which proved to be especially good, included an illustration of the article on sale. These illustrated coupons were extremely helpful in solving problems involving money, since several youngsters did exhibit severe reading problems. Task cards were made by the teacher so students could be challenged individually, but with reasonable hope for arriving at a solution.



*Messy*

*but*

*Effective*

Task cards were also made by teachers which encouraged students to challenge themselves in matters concerning money, budgeting, and shopping. Manipulative materials were made available within the

mathematics laboratory corners of classrooms which lead to successful problem solving experiences. As with other groups, some tapes were made as children described how they went about solving particular types of problems.

*Fourth Graders Enjoy Solving Problems*

The teachers of the fourth grade groups employed mathematics laboratory approaches utilizing a number of interesting activities to clarify mathematical concepts. Problems involving angles and their measurements seemed to present a number of difficulties to the students. A discussion of rocket flight led to a decision to build and fire rockets from the school playground. It was then decided to build relatively simple instruments to measure the angle of flight of the rockets, and the maximum heights reached before the descent parachutes opened. Students were provided with reference materials on the subject, and with their teachers constructed measuring devices to be used in conjunction with a rocket launch. On the day selected, the other groups involved in the summer program were invited to witness the rocket launching. With a few

minor difficulties, the rockets were launched with students employing homemade measuring devices to record angles and height. As a result of this activity, and the employment of teacher constructed task cards to rein force the concepts learned, the children developed greater interest in learning more about angles and the means of measuring them. Through this activity the basic idea that problem solving could be fun was also demonstrated to all grade levels.

Students on the fifth grade level again employed an active approach to problem solving. Among the more popular activities was an ongoing game of Monopoly which served as an interest stimulant for a variety of problems involving money, budgeting, and record keeping. The game, which remained set up on a table in the room, during the four weeks of the program, was used on an unscheduled basis. Each child kept a written record of the amount of money used to purchase property, the amount of rent paid out, the amount and type of income received, and a daily balance based on receipts and expenditures. Problems involving the computation of interest when borrowing became necessary were also explored. The teacher provided a variety of increasingly difficult problems based on the game experiences of the children. Student interest, and motivation were high in terms of this activity.

This extremely brief overview of a few of the many activities utilized during this program was presented to give the reader a better picture of the overall philosophy involved. These and other activities were later discussed in district grade level workshops which will be described in another part of this publication.

*What An Answer!*

## EVALUATION AND FOLLOW UP

The sixth week of the program followed the original program design and was used to evaluate what had taken place and to develop definite plans for follow-up activities. At the onset of this program it was decided that the teachers participating would share their experiences by serving as resource leaders for grade level workshops in the fall. At these grade level workshops the achievements and findings of the summer program would be discussed. Since there were two teachers for each grade level, a team approach to leadership was employed. Each elementary building principal, before the grade level meetings scheduled by the director of elementary education, held a faculty meeting where a

broad overview of the summer program was presented.

Each of the grade level meetings proceeded with a design similar to the mathematics approach employed during the summer. Task cards were constructed which challenged teachers to approach problem solving in the same manner that students had done during the summer. Teachers at all grade levels involved expressed an interest in further in-service experiences on the district level to improve their abilities in teaching problem solving in mathematics. This program is now being planned.

## PROGRAM STRENGTHS

Following the original plan of evaluation which took place during the sixth week of the program, the teachers who had participated met with the program coordinator to discuss strengths and weaknesses. Each teacher turned in reports on all phases of the program to the project coordinator and also discussed various parts of the program on tape. Mr. Peter Martin of the Curriculum Development Center reviewed these reports with teachers, and the project coordinator. The following strengths were identified by teachers:

## FREEDOM TO TEACH AND TO EXPERIMENT

On this topic, teachers agreed that they felt challenged by the problem at hand in working with children who had not made satisfactory progress using traditional methods. The fact that they were encouraged to review and experiment with new materials provided for their use in this program was cited as one of the strongest points of the program. Lesson plans were for teacher use based on individual needs and changed

as student progress or lack of progress was noted. They were written to help teachers work with students and not to fulfill administrative requirements. The unusual became commonplace contributing to increased interest by both students and teachers.

## COORDINATION BETWEEN CLASSROOM TEACHERS AND THE READING SPECIALIST

This factor appeared repeatedly on program evaluation sheets. The fact that teachers were able to concentrate their efforts on specific problems in reading and mathematics through the use of a variety of approaches involving two different teachers was considered a program strength. This type of reinforcement was recommended for study during the regular school year.

## TIME FOR PLANNING

The original program as approved provided one full week at the beginning plus one hour at the start of each day when students were present for planning. Teachers agreed that this time was vital if progress was to be achieved. They also agreed that as a result of living through this summer program the professional staff had improved its own planning skills. Modifications of this approach were also suggested for implementation during the regular school year.

## TIME FOR INTERCHANGE OF IDEAS

All participants were in agreement concerning the value of the time available to teachers for getting together to exchange ideas among themselves and with outside consultants. In a relaxed atmosphere, the professionals felt free to discuss their own ideas and methods for

attacking recognized problems. This exchange of ideas served to motivate each teacher to continue to build and improve this program direction based on the total experience of the group. Unanimous opinion was expressed that teachers and other specialists need to be able to communicate better within grade levels, within schools, and within the total school district.

## TIME FOR EVALUATION DAILY AND AT THE END OF THE PROGRAM

Without exception program staff agreed that daily evaluation was necessary. Log books were kept by each teacher with daily entries on each child participating in the program. These logs were turned in to the program coordinator at the end of the program with recommendations for improvement. These log books were not set up to serve as report cards, but rather to provide to all concerned individuals maximum information on each child.

The sixth week of the program was also set up as a period of evaluation and planning. During this week teachers and outside specialists reviewed the accomplishments and failures experienced. They discussed common problems and made recommendations for the in-service follow up action they felt necessary as a result of their own experiences during this program. There was agreement that such a program had real value, but you have to experience such a program to be able to make significant improvement in developing future programs.

## AVAILABILITY OF MATERIALS

Teachers commented favorably on the fact that additional materials had been made available as a component of this Title I project which

were new in approach to the children participating. Since much of this material was also new to teachers, interest levels of both students and teachers were positvely affected. In the grade level workshops which were given this fall, many of these new commercial materials, were demonstrated as well as manipulative materials constructed by the teachers themselves. As a result of the positive feelings of the teachers involved in this project, these materials are now available on a district-wide level.

## PLEASANT WORKING RELATIONSHIPS

This factor was mentioned repeatedly on program evaluation sheets. All professionals involved in any way in this program worked in terms of improving instruction for a group of children with real learning problems. Content specialists from the State Education Department including Fred Paul and Lynn Richbart of the Bureau of Mathematics Education functioned within this team approach. The coordinator was not a "supervisor", but rather a person who helped teachers to reach the goal of better instruction.

## ENCOURAGEMENT TO TRY NEW METHODS WITHOUT THE PROBLEM OF FAILURE

Underlying this statement was the fact that children had no test to pass at the conclusion of the program and teachers were not bound to any instructional approach. If something was not working, teachers were encouraged to make the program adjustments they felt necessary in terms of the best information available to them. There was neither teacher nor student failure because something just didn't work.

Teachers felt that this atmosphere contributed to the high interest and morale of all concerned.

## WEAKNESSES

As is true with any new program, weaknesses were identified by the participants and suggestions for improvement were given. Undoubtably, honest self evaluation of this type is a vital ingredient if substantial improvement of any program is to be attained.

## NEED FOR "BETTER" PRIOR INFORMATION ON CHILDREN

Teachers agreed that certain specific information on each child should be available to each teacher involved before the program starts. However, others felt that only certain basic information should be available until teachers had time to make their own professional judgments unaffected by pre-conceived notions of **an individual.** They realized that a major contributor to this weakness was the lateness of project funding which inhibited more comprehensive planning. A suggestion was made that a committee develop a form for this purpose if this project is continued next summer as was recommended by the teaching staff.

## ABSENCE OF PSYCHOLOGICAL SERVICES

When this project was in the planning stage, the services of a psychologist who would work with the teachers in interpreting severe learning problems, was contemplated. However, it was not possible to provide this service since the person to be involved had other summer commitments by the time funding could be assured. The project staff agreed that psychological services would be a valuable addition. To determine how such a program could best be structured to serve those involved, a meeting of project staff and the director of pupil personnel services is contemplated.

## ATTENDANCE NOT COMPULSORY

Attendance was not compulsory as it would be during the regular school year. Some staff members felt that some children may have missed classes because of the lack of pressure of attendance which existed during the summer. Actually, attendance was taken daily and reported to the project coordinator who contacted the parent of each child absent from school. This contact was undertaken as a service so youngsters would be able to get the maximum benefit from the four week program. The attendance was actually excellent, but teachers felt the opportunities offered by this program were such that hopefully all children would attend every day. Attendance for the four weeks was as follows:

91% in grade 2 which included the absences of one child who was hospitalized
91% in grade 3 with 2 children having a total of 16 absences
91% in grade 4 with 4 children having 20 absences including one student who went on vacation for a week
97% in grade 5

These attendance figures should be viewed with the fact that transportation was not furnished kept in mind.

## LACK OF EXPERIENCE BY TEACHERS IN THIS TYPE OF WORK

For all participating teachers, including the reading specialist and the project coordinator, this was their first experience with a project of this type. Because of this factor, planning was more difficult and extensive changes were made in teacher "lesson plans" especially during the first week of the program. There was basic agreement that the experience gained as a result of working with these educationally disadvantaged children would serve as a valuable resource in planning future action.

## INADEQUATE TESTING DEVICES

The criteria for participation in this program as stated in the introduction to this project description did not provide for specific identification of weaknesses. Since the students would hopefully improve, it was necessary to arrive at a definition of improvement. The decision was made to structure pre and post tests of fifteen problems each based on expected average achievement on a grade level basis. The pre tests were constructed during the first week of the program and were reviewed for reading difficulty by the reading specialist. All agreed that in a future program more time should be allowed for the development of these tests. It was also agreed that a testing specialist should be consulted. With earlier funding, such a procedure would be possible. The definition of improvement as measured by the post test was based on the past performance of the students participating with the expectation that an increase of one to three problems solved correctly would be normal growth. This criteria was based on the judgment of the teachers, remedial specialists, and the administrators. Therefore a pupil solving more than three additional problems correctly would be making gains beyond usual expectations. After the pre tests were administered an item analysis was charted by group, by grade, and for the total group. This information was used by the teachers in planning program content.

The results of the testing procedure described in terms of number of problems correctly solved were:

| | Pre Test | Post Test |
|---|---|---|
| Grade 2 | 48 | 123 |
| Grade 3 | 77 | 100 |
| Grade 4 | 76 | 117 |
| Grade 5 | 57 | 110 |

The target of an increase of 20% would have required an increase of 141 problems solved correctly in the post test. The actual additional number solved correctly was 192. It thus appears that the original objectives were realistic in terms of expectations within the limitations of such a short program. These results should also be viewed in the light already noted in a preliminary part of this report that the severest reading problems existed on the third grade level as measured by standard achievement tests. Teachers felt that testing should and could be improved upon.

## PROGRAM TOO SHORT

All participants were in agreement that the program was too short. During the week used for evaluation and planned follow up, it was suggested that means should be explored whereby the lessons learned in the summer program could be applied during the regular school year. This suggestion is presently being implemented. A positive factor accompanying the weaknesses identified was the staff feeling of lets do it again --- lets do a better job based on what we learned this past summer.

## DISTRICT PROFILE

This profile is presented to enable the reader to gain a better mental image of the surroundings in which this project took place. Persons interested in obtaining further information may wish to contact the various participants who shared the experiences associated with this project. A list of these people is included as a part of this report.

| | | |
|---|---|---|
| Location - | Valley Central School | |
| Pupil Population - | ( 5055 ) | K-12 |
| Teaching Staff - | | |
| School Buildings - | Elementary (K-5) - | 5 |
| | Middle School (6-8) - | 1 |
| | High School (9-12) - | 1 |
| | Under Construction - | ( 0 ) |
| Rate of Annual Growth - | | 5% |

### PROJECT PERSONNEL

| | |
|---|---|
| William Moran | - Superintendent of Schools |
| Leo Flax | - Director of Federal Projects |
| Robert Schoonmaker | - Director of Elementary Education |
| Henry E. Morse | - Project Co-ordinator |
| Freida Smith | - Reading Specialist |
| Joanne Komonchak)<br>Karen Lopiano ) | - Grade 2 - Teachers |
| Ernest Carter)<br>Edward Kubina) | - Grade 3 - Teachers |

Louis Andrews )
Frank DeSantis) - Grade 4 - Teachers

George Heitz )
Edward Rechtorovic) - Grade 5 - Teachers

Frederick Paul
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